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Social Support and its Correlation with "3M Plus" Behavior in the Prevention of Dengue Hemorrhagic Fever

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ABSTRACT

The incidence of dengue hemorrhagic fever has increased slightly in recent years. One of the factors is the decrease of the "3M Plus" behavior—draining bathtub regularly, covering water containers, burying garbage in the ground, plus other prevention attempts. The aim of this study was to analyze the correlation between social support with the "3M Plus" behavior in the prevention of dengue hemorrhagic fever. The study used a correlational method with a cross-sectional approach. The sample was 51 housewives in Surabaya. The independent variable was social support, while the dependent variable was "3M Plus" behavior. The data were collected by using Social Provision Scale questionnaire and "3M Plus" behavior questionnaire and analyzed by using Spearman rank correlation with $\alpha<0.05$. A close positive relationship was found between social support with the behavior as $p=0.01$ and the coefficient correlation $r=0.517$. The findings show that the support from figures in the community is strongly related to the people's "3M Plus" behavior. The government should involve, empower, and encourage the community public figures to be active in the prevention of dengue hemorrhagic fever.

Keywords: *behavior, dengue hemorrhagic fever, social support, prevention program*

Introduction

The incidence of dengue hemorrhagic fever (DHF) in the world continues to increase every year and has become a major global health focus. Around 2.5 billion people who live in tropical and subtropical countries are at risk, including the Indonesian people.[1] The outbreaks of DHF can be avoided if the early awareness and vector control systems are implemented properly, integrated and sustainable.[2] The government of Indonesia has conveyed information about these activities to prevent outbreaks of dengue fever in the community through Act No. 4 of 1984 concerning infectious disease outbreaks and Minister of Health Regulation No. 1501/Menkes/Per/X/2010 concerning certain types of infectious diseases that can cause outbreaks and efforts to overcome them.[3,4] Vector control through vector survey is regulated in Minister of Health Decree No. 581 of 1992, requiring that mosquito nest eradication activities are carried out periodically by the community coordinated by neighborhood and citizens associations in the form of a "3M Plus" prevention behavior program consisting of draining bathtub regularly (*menguras*), covering water containers (*menutup*), burying garbage in the ground (*mengubur*), plus other prevention attempts.[5] Since then, the government has been promoting the program massively as a priority action in grassroots.

The success rate of mosquito nest eradication activities through 3M Plus can be measured by larvae-free index (LFI). If the LFI is more or equal to 95%, the transmission of DHF can be prevented.[2] However, the LFI in Indonesia reached 76.3% in 2012, 79.3% in 2013, and 80.9% in 2014.[6] This shows that there is still a lot of work to do to prevent the DHF cases in Indonesia.

Several factors associated with the dengue prevention behavior are age, gender, duration of stay in a regency, total family members, as well as the perception of prevention behavior.[7] The prevention program isalso associated with community participation, intersectoral coordination, and community empowerment, as well as economic cost.[8,9] However, no prior study has been

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conducted to identify the relationship between social support and the implementation of prevention behavior, especially in the 3M Plus program of Indonesia.

Social support can have an implication in a health behavior.[10] Also, social support and leadership can influence the organizational commitment.[11] It enables the promotion of 3M Plus behavior to be given by community leaders, because social support from community leaders in health behavior shows a high percentage of 58.97%.[12] The components of social support consist of attachments, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance.[13]

There are several factors that can influence a person's behavior according to Green (1984), namely, enabling, predisposing, and reinforcing factors.[14] These three factors support the social character of the community, including the reinforcing factors where community leaders provide innovation and behavioral encouragement so that the surrounding community will adopt this behavior and, in the end, there will be a change in the community behavior.[15]

Thus, this research is aimed to identify the relationship between social support and 3M Plus behavior in the prevention of DHF in the community.

Method

This study used a correlational research design with a cross-sectional approach. The study involved 51 mothers in Benowo District, Surabaya. One respondent represented one household. The duration of the study was two months from May to June 2016. The inclusion criteria of the respondents were had obtained a senior high school degree, maximum age 50 years, healthy and had no mental disorder.

The variables were social support and 3M Plus behavior. The social support was measured using the Social Provision Scale (SPS) by Cutrona and Russel (1987). The SPS uses a 4-point Likert scale scoring with 1 stands for "very much disagree" and 4 for "very much agree". The questionnaire had 24 items covering six domains, including attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance.[13] Meanwhile, the 3M Plus behavior was assessed using the instrument developed by Wuryaningsih (2008). The instrument consisted of 15 questions with two answers, "Yes" (Score: 1) and "No" (Score: 0). The interpretation of the total score was good for more than 10, enough for 5-10, and less for less than 5.[16]

Data analysis used rank test correlation Spearmen test with significance level $\alpha < 0.05$. The data analysis used a quantitative method and was carried out for quantitative data covering the stages of descriptive and analytic analysis. This research will perform a descriptive analysis of all research variables by calculating the mean and standard deviation.

Results

Table 1 shows that the age of respondents was mostly in the range of 18-35 years, as many as 27 people (52.9%). Most respondents were unemployed or becoming housewives, as many as 34 people (66.7%). The majority of respondents' income was still below the minimum regional wage (UMR), as many as 36 people (70.6%). There were only 18 people (33.5%) who had a family history of suffering DHF.

The respondents who obtained good social support were 30 persons (58.8%) and only one person (2%) had lack of social support. In addition, the majority of 3M plus behavior level was good (34 people; 66.7%) and enough (17 people; 33.3%). There was none who practiced less 3M behavior (Table 2).

Table 1: Distribution of demographic characteristics (n = 51)

Characteristics	f	%
Age		
18-35	27	52.9
36-50	24	47.1
Occupation		
Unemployed	34	66.7
Entrepreneur	9	17.6
Labor	2	3.9
Entrepreneur	6	11.8
Income		
Below UMR[a]	36	70,6
Above UMR[a]	15	29.4
Family History of DHF		
None	33	64.7
Exist	18	35.3
[a] UMR = Minimum Regional Wages		

Table 2: Social Support Level and 3M Plus behavior (n = 51)

Parameters	f	%
Social Support Level		
Good	30	58.8
Enough	20	39.2
Less	1	2
3M Plus Behavior		
Good	34	66.7
Enough	17	33.3
Less	0	0

Table 3 shows that respondents who received good social support and had good 3M plus behavior were 26 people (51%) while respondents who received less social support and had enough 3M plus behavior were one person (2%).

The statistical analysis of the Spearman Rho correlation test shows that the p = 0.01 (<0.05) and the correlation coefficient (r) = 0.517. The results indicate that the H_0 is rejected. There are a significant relationship and a fairly strong level of relationship in a positive direction between social support and 3M Plus behavior in the prevention of DHF. It shows that, if the social support is increasing, the 3M Plus behavior will be also getting better.

Table 3: Cross-tabulation of Social Support and 3M Plus Behavior (n = 51)

Social Support	3M Plus behavior				Total	
	Good		Enough			
	f	%	f	%	∑	%
Good	26	51.0	4	7.8	30	58.8
Enough	8	15.7	12	23.5	20	39.2
Less	0	0	1	2.0	1	2
Total	34	66.7	17	33.3	51	100
Spearman Rho p = 0.01; r = 0.517						

Discussion

The study results show a strong positive relationship between social support and 3M plus behavior in the prevention of DHF, which means that the better the social support provided, the more the 3M Plus behavior is implemented. Social support is categorized as a reinforcing factor which can affect human behavior, in this case 3M Plus.[14] In the DHF prevention strategy, a collaboration between the community, health workers and community leaders is needed.[17] Community leaders themselves are one form of social support in society.[1] A study also reveals that intersectoral coordination, community empowerment programs and routine control, which involve leadership of public figures, can change the behavior in dengue prevention.[9] However, the respondents who have less behavior can be influenced by a lack of interaction with community leaders, even if the social support was good.

Further, social support is the result of the interaction of the situational context (certain influential life events), intrapersonal context (how someone sees themselves and the existence of important people around them and also the expectations in relationships with these people), and interpersonal contexts (subject relations with social support providers).[18,19] The leaders also can provide counseling, which is also effective to change the prevention behavior in community.[20] The results show as many as 12 people obtained enough social support, but had enough 3M plus behavior, while eight people got enough social support and had good 3M plus behavior, and one person got less social support but had enough 3M plus behavior. Such results also can be influenced by a personal factor, such as age, gender, duration of stay, perception and total family members.[7]

The social support is the result of the interaction, one of which is intrapersonal interaction, namely, how someone sees themselves, the nature of the surroundings, public figures, and also the relationship expectation of these people.[18,19] The good results can be the effect of the good relationship between respondents and community leaders, so that good collaboration is formed in the prevention of DHF through 3M Plus programs. The results are also strongly influenced by the willingness of the respondents to establish intense relationships with the community leaders. For respondents with less social support, but having sufficient 3M plus behavior, it is likely because the respondent did not want to establish a good relationship with community leaders because they were only 20 years old (too young) and did not have more emotional maturity like respondents aged 36-50 years. However, such respondents had an awareness of 3M Plus behavior in the prevention of dengue, because of having past experience that family members had been affected by dengue.

Conclusion

It can be concluded that the majority of respondents obtained positive social support and had good 3M Plus behavior. There is a meaningful relationship between social support and 3M Plus behavior in preventing DHF. Social support from public figures in the community is strongly related to the people's 3M Plus behavior. The study recommends the government to involve, empower, and encourage the community public figures to be active in the prevention of dengue hemorrhagic fever.

Ethical Clearance: The study has obtained ethical approval from the Health Research Ethics Committee of the Faculty of Nursing, Universitas Airlangga, No: 192-KEPK.

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Conflict of Interest: None.

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